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*Stated Meeting, December 1, 1865.*

Present, fifteen members.

Prof. CRESSON, Vice-President, in the Chair.

A letter with photograph was received from Mr. R. W. Fox, near Falmouth, England, dated 7th month 11th, 1865.

A letter requesting the return of manuscripts was received from Mr. Julien, dated New York, Nov. 28th, 1865.

A letter concerning the Zeisberger manuscripts was received from Mr. D. W. Fiske, dated Syracuse, Nov. 13th, 1865. On motion, it was referred to the Library Committee.

A letter of envoi was received from Mr. I. A. Sheppard, dated Boston, Nov. 29th, 1865.

Donations for the Library were received from the London Meteorological Society, Boston N. H. S., Silliman's Journal, Mr. Sheppard, Dr. Hammond, Mr. Patterson, and the California N. H. Society.

The death of Dr. Wm. M. Euler, a member of the Society, at Philadelphia, on the 27th ult., aged 45, was announced by the Secretary.

An application for the Magellanic premium was read and referred to the Board of Officers.

Mr. Lesley communicated certain extracts from letters concerning the development of the East Kentucky oil region, with records of some of the recent borings.

1. A letter from Mr. Hamilton Lyon, dated Paintville, Ky., Oct. 30th, 1865, "Dear Sir: In accordance with my promise last spring inclosed you will please find the records of the boring of several wells in this vicinity, made up by the proprietors and superintendents with much care; and in the main, I think they are pretty reliable. Dixon's Oil turned out a mere seep, which a few hours' pumping exhausted. Of the 'Spradlin Well,' on 'Little Mud Lick,' the property of the 'Cliff Spring Co.,' which I am superintending, I am unable to give you anything like a definite record. The first 300 feet were bored before the war, and all records lost. I doubt very

much if one could have been got, from the fact that the gas has always carried the borings off. At 330, however, I am satisfied I struck the first Limestone; and at 341 a stratum of Shale, similar to that struck by Brown at 346. This was succeeded by Limestone, which has continued to where I am at present, 410. Brown's well and mine are on the same line of strike, one mile apart."

Low's Well, belonging to the Big Paint Creek Oil Co., and located in Preston's Flat, at the mouth of Paint Creek.

Conductor	69½ ft.
White Sandrock	4 73
Black Slate	9 82
Dark Sandrock	8 90
White "	6 96
Dark Slate	59 155
Sandrock	9 164
Black Slate	56 220
Sandrock	180 400
Slate	6 406
Sandrock	84 490
Black Sandrock	20 510
Black Slate	10 520
Limestone } xi	20 540
Dark Sandrock } xi	25 565
Limestone }	47 612
Salt Water, at from	375 to 400

Steven's Well, on Wallace Ruel's Place, on Paint Creek, one mile from Paintville.

Conductor	40 ft.
Slate and Soapstone	9 49
Coal	2 51
Gray Sandrock	380 431
Blue "	2 433
Dark "	22 455
Soapstone	14 469
Limestone or fine sand	7 476
Light-colored Slate	3 479
Dark Sand	14 493
Limestone xi	115 608
Olive Shale	57 665
Light-colored Slate	15 680

Madison Petroleum Co.'s Well, opposite Stafford's Mill, four miles from Paintville and on the same side of the Creek. Brown, Supt.

Conductor	49 ft.
Gray Sandrock	10 59
White " (hard)	1 60
Soapstone and Clay	1 61
Gray Sandrock	281 342
Black Calcareous Sand	4 346
" Slate	8 354
" Calcareous Sand	16 370
Limestone (hard) xi	77 447
Olive Shale	94 541
Slate	85 626
Strong Salt Water at	290 ft.

Dixon's Well on Paint Creek, and three hundred yards from Old Hinkley Well, nine miles above Paintville.

Conglomerate Sandrock	15 ft.
White "	19 34
Laminated "	*17 51
Gray "	36 87
Soapstone	67 154
Hard White Sandrock	36 190
Blue "	5 195
Soapstone	18 218
Slate	6 219
Coarse White Sandrock	31 250
Flinty Rock	7 257
" Sandrock	15 272
Brown " and Chalk	8 280
White Sandrock	*42 322
* All Conglomerate	
** Limestone	
Struck vein of oil at	298 ft.

2. A letter from Mr. U. C. Burnap, Brooklyn, Nov. 27th, 1865 : "About a dozen wells are in progress on Paint Creek, some of them down 900 feet; but as yet no oil has been struck, except small veins near the surface. Operations are still going on, and at least two of the wells will be put down to 1500 feet. New wells are being commenced near the Oil Springs, though the opinion seems to be gaining ground that the deposits of oil are *above* the water-level and that no oil will be found except the heavy oil which leaks through the XII series. All the Sandy Valley has been very thoroughly prospected from a point seven miles below Louisa to Paintville. Not less than 30 wells are now going down, many of which are below 600 feet."

It is said that the operations in Cumberland County have been successful, and that several large wells have been struck; but the stories are rather apocryphal.

My last trip extended up 130 miles above Paintville to the Tennessee line. All through the Valley the same exhibitions of surface oil are found, but no wells are going down above the mouth of Paint.

Every well down 500 feet is producing salt water in abundance."

Mr. Lesley remarked upon the contents of these letters that they went to confirm his published views of the source of the surface oil deposits of the Valleys of the Sandy in Eastern Kentucky. There is an actual horizon of oil at the base of the coal measures. The plants of the great conglomerate (XII) have been converted into thick oil, and reach the surface by a horizontal drainage above water-level, over the water-bearing shales of the False or Lower Coal Measures. The next horizon of oil is undoubtedly far down in the Devonian, near or even below the base of the Knobstone Formation of Kentucky.

Dr. Newberry read a paper at the meeting of the National Academy, held in August last at Northampton, Mass., in which he asserted that the great flows of oil which took place, years ago, in Southern Middle Kentucky, came from the *Lower Silurian Limestones*. The same horizon has yielded oil in limited quantities back of Chicago in Illinois. Mr. Lesley learned, during a recent visit to Montreal, that the Canadian Geological Survey had found the Lower Silurian Limestones of the Manatoulin Islands in Lake Huron, oil bearing. Mr. Lesley lately saw, himself, small quantities of petroleum trickling from Upper Silurian Limestones at Cape Gaspé, the easternmost point of Canada East, the surfaces of the limestone bed being almost covered with the vestiges of cocktail fucoids, coralloids, bivalves, and trilobites.

Stress has been laid by some geologists of note upon a supposed genetic connection between the accumulation of Petroleum and anticlinal axes. But there are no anticlinal axes in the Pennsylvania oil region of the French and Oil Creek wells, nor in the Pennsylvania and Ohio Oil region of the Beaver River, nor in the E. Kentucky oil region of the Sandy and Licking waters. The only well-defined anticlinal among oil wells is a mere upsqueeze crossing the Ohio River near Marietta, bringing the oil rocks near enough the surface to be tapped, and thus only effecting the finding of oil. There is no apparent connection between the petroleum of the Alleghany River salt wells above Pittsburg, and any of the anticlinals which separate the great coal area into basins, to the east of them. The asserted east and west anticlinals of the Enniskillen oil region in Canada West, are very problematical, their places being covered by a peculiar mud drift of local character; and their existence has been rendered still more doubtful by the recent discovery by Prof. James Hall, of *Genesee Slates* on Lake Huron, and at points between it and Lake Erie. This goes to show a north and south synclinal just across the supposed lines of east and west anticlinal. The true relationship of petroleum with surface springs seems to be one of simple hydrostatics. Every natural oil-spring is an artesian spring, without regard to the existence of anticlinals or profound earth-crust faults.

Dr. Wirtz has recently published a remarkable and important report upon the West Virginia petroleum vein, and its mineral matter, which, he says, is not *Albertite*, but a new compound, which he calls *Grahamite*. He has admirably well discussed the selvage structure of the vein. But the geological evidences of the generation of this mineral from the petroleum, which is obtained by the borings of that region, must outweigh any mere chemical reasoning on the composition of the mineral itself; especially when we recollect how infinitely varied are the characters of the products of different oil wells. Dr. Wirtz is wrong in ascribing to Mr. Lesley any idea of connecting the asphaltum of this vein with the Marietta anticlinal or any other. The vein crosses the Marietta upthrust (it is no anticlinal in the ordinary sense) nearly at right angles.

The following is a record of about 950 feet of the Babcock and Adams well, now going down, on the property of the Clarion Coal & Oil Co., three or four miles north of Buena Vista, in McKean County, Pa., given by Mr. O. N. Adams, of Chicago.

Judge Wilcox's old mansion, about 425 feet above the Valley.

Lowest coal-bed, about 300 feet above the Well in the Valley.

Mouth of well.	ft.
Pipe conductor . . . . .	41
Slate rock . . . . .	30
Red rocks . . . . .	137
Sandstone . . . . .	8 —
Slate . . . . .	26 —
Red rocks . . . . .	64 —
Blue sand rock . . . . .	21 —
Sand rock . . . . .	5 —
Red rocks . . . . .	31 —
Slate rock . . . . .	13 —
Sand rock . . . . .	8 —
Red rocks . . . . .	31 —
First sand rock made up of quartz crystals . . . . .	14
Slate rocks and thin sands . . . . .	85
Sand rocks and some slates . . . . .	47
Slate rocks and thin sands . . . . .	77
Second sand rock made up of quartz crystals . . . . .	20
Slate rocks, &c. . . . .	43
Sand rocks, &c. . . . .	48
"Soapstone" (compact clays) . . . . .	65
Dark sandy rocks, about . . . . .	40
"Soapstone" (clay beds) about . . . . .	60
Total, present sinking, Dec. 1, 1865, . . . . .	914
Or, below the coal, about . . . . .	1200

Mr. Chase referred to the lately published hydrogen sulphur tests of Mr. Barrett in England, and thought they afford a plausible explanation of the production of the peculiar odor so often noticed in connection with the striking of objects by lightning.

Mr. Marsh described his observations on the nights of the 12th and 13th of November from his window in Germantown, looking towards the radiant point in the northeast. Even under these unfavorable circumstances he was able to observe 66 meteors in 96 minutes. The hourly average has therefore been steadily on the increase for the last four years, giving a good reason for expecting the grand maximum next year.

Dr. Wilcox described the phenomenon as he saw it in the country from 11 P.M. to 5½ A.M. About midnight two meteors rose from the horizon and vanished upwards; many

others skirting the horizon. The radiant point was well defined and fixed.

The Treasurer presented his annual report, which was referred in due course to the Finance Committee.

The Publication Committee presented its annual report.

Pending nominations 540-544, and new nomination 545 was read.

On motion of the Librarian, the Montreal Natural History Society was ordered to be placed on the list of Corresponding Societies to receive both Proceedings and Transactions.

And the Society was adjourned.

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*Stated Meeting, December 15, 1865.*

Present, thirteen members.

Dr. Wood, President, in the Chair.

Letters, acknowledging the receipt of Transactions and Proceedings, were received from the following corresponding societies :

New York Historical Society, May 31, 1865, Nos. 12, 13, 14, XIII, i.

Rheinland Nat. Hist. Union, March 3, 1865, " 67, 69.

German Geological Society, Nov. 6, 1864, " 69, 70.

Royal Academy, Lisbon, March 22, 1865, " 69, 70.

Imp. Soc. Naturalists, Moscow, Feb. 26, 1865, " 69, 70.

American Oriental Society, May 26, 1865, " 70, 71.

Lists XIII, i.